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SEQUENCE LISTING

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MALLET, Jacques
RAVASSARD, Philippe

<120> POLYPEPTIDES OF THE "BASIC-HELIX-LOOP-HELIX" bHLH
FAMILY, CORRESPONDING NUCLEIC ACID SEQUENCES

<130> P26,952 USA

<140> US 09/595,947
<141> 2000-06-16

<150> FR96/15651
<151> 1996-12-19

<150> PCT/FR97/02368
<151> 1997-12-19

<150> US 09/331,356
<151> 1999-07-12

<160> 40

<170> PatentIn Ver. 3.1

<210> 1
<211> 1460
<212> DNA

<213> Rattus norvegicus

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cgattagcag ctcagaagtc cctctgggtc tcaccactgc acagaggccg aggacccct 180
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agagtgaccc aatccagtgt 1460

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<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

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<210> 3
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primers

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<210> 4
<211> 25
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<213> Artificial Sequence

<220>
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aaccttaact ccgcgtgga tgcgc 25

<210> 5
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primers

<400> 5 cgcggtgtcc tgccccacc 18

<210> 6
<211> 6
<212> DNA
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<223> Description of Artificial Sequence: E box

<400> 6
caggtg 6

<210> 7
<211> 6
<212> DNA
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<220>
<223> Description of Artificial Sequence: Mutated E box

<400> 7
tccgtg 6

<210> 8
<211> 214
<212> PRT
<213> Rattus norvegicus

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Thr Gln Gln Pro Phe Pro Gly Ala Ser Asp His Glu Val Leu Ser Ser
20 25 30
Asn Ser Thr Pro Pro Ser Pro Thr Leu Val Pro Arg Asp Cys Ser Glu
35 40 45
Ala Glu Ala Gly Asp Cys Arg Gly Thr Ser Arg Lys Leu Arg Ala Arg
50 55 60
Arg Gly Gly Arg Asn Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65 70 75 80
Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
85 90 95
His Asn Leu Asn Ser Ala-Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
100 105 110
Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
115 120 125
His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
130 135 140
Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro Cys Gly Glu Leu Gly Ser
145 150 155 160
Pro Gly Gly Ser Ser Gly Asp Trp Gly Ser Ile Tyr Ser Pro Val
165 170 175
Ser Gln Ala Gly Ser Leu Ser Pro Thr Ala Ser Leu Glu Glu Phe Pro
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Gly Leu Gln Val Pro Ser Ser Pro Ser Cys Leu Leu Pro Gly Thr Leu
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Val Phe Ser Asp Phe Leu
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<212> DNA
<213> Homo sapiens

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ccgcactgcg gggagctggg cagccaggc ggtccccccg gggactgggg gtccctctac 840
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gcattgcaaa gtgcgtcat tttaggcctc ctctctgcca ccacccata atcccattca 1260
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ccctcactca 1330

<210> 10
<211> 214
<212> PRT
<213> Homo sapiens

<400> 10
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Page 4

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Arg	Gly	Gly	Arg	Ser	Arg	Pro	Lys	Ser	Glu	Leu	Ala	Leu	Ser	Lys	Gln
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Phe	Pro	Asp	Asp	Ala	Lys	Leu	Thr	Lys	Ile	Glu	Thr	Leu	Arg	Phe	Ala
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His	Asn	Tyr	Ile	Trp	Ala	Leu	Thr	Gln	Thr	Leu	Arg	Ile	Ala	Asp	His
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Ser	Leu	Tyr	Ala	Leu	Glu	Pro	Pro	Ala	Pro	His	Cys	Gly	Glu	Leu	Gly
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Ser	Pro	Gly	Gly	Pro	Pro	Gly	Asp	Trp	Gly	Ser	Leu	Tyr	Ser	Pro	Val
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Ser	Gln	Ala	Gly	Ser	Leu	Ser	Pro	Ala	Ala	Ser	Leu	Glu	Glu	Arg	Pro
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Gly	Leu	Leu	Gly	Ala	Thr	Ser	Ser	Ala	Cys	Leu	Ser	Pro	Gly	Ser	Leu
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<210> 11

<211> 18

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer

<400> 11

caacgaccgg cagcgcaa 18

<210> 12

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer

<400> 12

gcccgatgt agttgtggc gaag 24

<210> 13

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer

<400> 13
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<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer

<400> 14
agacgacgacg aagctcacca 20

<210> 15
<211> 24
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer

<400> 15
gctcaccaag atcgagacgc tgcg 24

<210> 16
<211> 25
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer

<400> 16
atcgttgaga ctcgttaccag cagag 25

<210> 17
<211> 25
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer

<400> 17
tcgttaccagc agagtcacga gagag 25

<210> 18
<211> 19
<212> DNA
<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: PCR Primer

<400> 18
ctgccagcct gggagactg 19

<210> 19
<211> 50
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 19
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<210> 20
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 20
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<210> 21
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 21
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<210> 22
<211> 24
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<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 22
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<210> 23
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 23
cgctatgcgc agcgtttgag tc 22

<210> 24
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 24
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<210> 25
<211> 24
<212> DNA
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<220>
<223> Description of Artificial Sequence: PCR Primer

<400> 25
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<210> 26
<211> 15
<212> DNA
<213> Artificial Sequence

<220> <223> Description of Artificial Sequence: Probe

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<210> 27
<211> 1381
<212> RNA
<213> Artificial Sequence

<220> <223> Description of Artificial Sequence: Probe

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gcccacuucg cgcgcccgac agcaaggguu gcgugcguug gcgcggcucg gagggccgg 240
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<210> 28
<211> 1427
<212> RNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Probe

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ccgcgcgaag ugugcattc aaagugcgcu cauuuuaggc cuccucucug ccaccacccc 1320
auaauccau ucaaagaaua cuagaauggu agcacuaccc ggccggagcc gcccaccguc 1380
uugggucgcc cuaccucac ucaaaucgaa uucccgccg 1427

<210> 29
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<212> DNA
<213> Rattus norvegicus

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<212> PRT
<213> Rattus norvegicus

<400> 30

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20 25 30

Leu Arg Ile Ala Asp His Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro
35 40 45

Cys Gly Glu Leu Gly Ser Pro Gly Gly Ser Ser Gly Asp Trp Gly
50 55 60

Ser Ile Tyr Ser Pro Val Ser Gln Ala Gly Ser Leu Ser Pro Thr Ala
65 70 75 80

Ser Leu Glu Glu Phe Pro Gly Leu Gln Val Pro Ser Ser Pro Ser Cys
85 90 95

Leu Leu Pro Gly Thr Leu Val Phe Ser Asp Phe Leu
100 105

<210> 31
<211> 60
<212> PRT
<213> *Rattus norvegicus*

<400> 31

Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met His Asn
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Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr Phe Pro
20 25 30

Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala His Asn
35 40 45

Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala
50 55 60

<210> 32
<211> 60
<212> PRT
<213> *Mus musculus*

<400> 32

Gln Arg Arg Leu Ala Ala Asn Ala Arg Glu Arg Arg Arg Met His Gly
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Leu Asn His Ala Phe Asp Gln Leu Arg Asn Val Ile Pro Ser Phe Asn
20 25 30

Asn Asp Lys Lys Leu Ser Lys Tyr Glu Thr Leu Gln Met Ala Gln Ile
35 40 45

Tyr Ile Asn Ala Leu Ser Glu Leu Leu Gln Thr Pro
50 55 60

<210> 33
<211> 60
<212> PRT
<213> *Mus musculus*

<400> 33

Leu Arg Arg Met Lys Ala Asn Ala Arg Glu Arg Asn Arg Met His Gly
1 5 10 15

Leu Asn Ala Ala Leu Asp Asn Leu Arg Lys Val Val Pro Cys Tyr Ser
20 25 30

Lys Thr Gln Lys Leu Ser Lys Ile Glu Thr Leu Arg Leu Ala Lys Asn
35 40 45

Tyr Ile Trp Ala Leu Ser Glu Ile Leu Arg Ser Gly
50 55 60

<210> 34
<211> 60
<212> PRT
<213> Mus musculus

<400> 34

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1 5 10 15

Val Asn Leu Gly Phe Ala Thr Leu Arg Glu His Val Pro Asn Gly Ala
20 25 30

Ala Asn Lys Lys Met Ser Lys Val Glu Thr Leu Arg Ser Ala Val Gln
35 40 45

Tyr Ile Arg Ala Leu Gln Gln Leu Leu Asp Glu His
50 55 60

<210> 35
<211> 237
<212> PRT
<213> Homo sapiens

<400> 35

Met Pro Ala Arg Leu Glu Thr Cys Ile Ser Asp Leu Asp Cys Ala Ser
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Ser Ser Gly Ser Asp Leu Ser Gly Phe Leu Thr Asp Glu Glu Asp Cys
20 25 30

Ala Arg Leu Gln Gln Ala Ala Ser Ala Ser Gly Pro Pro Ala Pro Ala
35 40 45

Arg Arg Ser Ala Pro Asn Ile Ser Arg Ala Ser Glu Val Pro Gly Ala
50 55 60

Gln Asp Asp Glu Gln Glu Arg Arg Arg Arg Gly Arg Thr Arg Val
65 70 75 80

Arg Ser Glu Ala Leu Leu His Ser Leu Arg Arg Ser Arg Arg Val Lys
85 90 95

Ala Asn Asp Arg Glu Arg Asn Arg Met His Asn Leu Asn Ala Ala Leu
100 105 110

Asp Ala Leu Arg Ser Val Leu Pro Ser Phe Pro Asp Asp Thr Lys Leu
115 120 125

Thr Lys Ile Glu Thr Leu Arg Phe Ala Tyr Asn Tyr Ile Trp Ala Leu
130 135 140

Ala Glu Thr Leu Arg Leu Ala Asp Gln Gly Leu Pro Gly Gly Ala
145 150 155 160

Arg Glu Arg Leu Leu Pro Pro Gln Cys Val Pro Cys Leu Pro Gly Pro
165 170 175

Pro Ser Pro Ala Ser Asp Ala Glu Ser Trp Gly Ser Gly Ala Ala Ala
180 185 190

Ala Ser Pro Leu Ser Asp Pro Ser Ser Pro Ala Ala Ser Glu Asp Phe
195 200 205

Thr Tyr Arg Pro Gly Asp Pro Val Phe Ser Phe Pro Ser Leu Pro Lys
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Asp Leu Leu His Thr Thr Pro Cys Phe Ile Pro Tyr His
225 230 235

<210> 36
<211> 244
<212> PRT
<213> Mus musculus

<400> 36

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50 55 60

Ala Gln Asp Glu Glu Gln Glu Arg Arg Arg Arg Gly Arg Ala Arg
65 70 75 80

Val Arg Ser Glu Ala Leu Leu His Ser Leu Arg Arg Ser Arg Arg Val
85 90 95

Lys Ala Asn Asp Arg Glu Arg Asn Arg Met His Asn Leu Asn Ala Ala
100 105 110

Leu Asp Ala Leu Arg Ser Val Leu Pro Ser Phe Pro Asp Asp Thr Lys
115 120 125

Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala Tyr Asn Tyr Ile Trp Ala
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130

135

140

Leu Ala Glu Thr Leu Arg Leu Ala Asp Gln Gly Leu Pro Gly Gly Ser
145 150 155 160

Ala Arg Glu Arg Leu Leu Pro Pro Gln Cys Val Pro Cys Leu Pro Gly
165 170 175

Pro Pro Ser Pro Ala Ser Asp Thr Glu Ser Trp Gly Ser Gly Ala Ala
180 185 190

Ala Ser Pro Cys Ala Thr Val Ala Ser Pro Leu Ser Asp Pro Ser Ser
195 200 205

Pro Ser Ala Ser Glu Asp Phe Thr Tyr Gly Pro Gly Asp Pro Leu Phe
210 215 220

Ser Phe Pro Gly Leu Pro Lys Asp Leu Leu His Thr Thr Pro Cys Phe
225 230 235 240

Ile Pro Tyr His

<210> 37
<211> 214
<212> PRT
<213> Mus musculus

<400> 37

Met Ala Pro His Pro Leu Asp Ala Leu Thr Ile Gln Val Ser Pro Glu
1 5 10 15

Thr Gln Gln Pro Phe Pro Gly Ala Ser Asp His Glu Val Leu Ser Ser
20 25 30

Asn Ser Thr Pro Pro Ser Pro Thr Leu Ile Pro Arg Asp Cys Ser Glu
35 40 45

Ala Glu Val Gly Asp Cys Arg Gly Thr Ser Arg Lys Leu Arg Ala Arg
50 55 60

Arg Gly Gly Arg Asn Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65 70 75 80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
85 90 95

His Asn Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
100 105 110

Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
115 120 125

His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
130 135 140

Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro Cys Gly Glu Leu Gly Ser
145 150 155 160

Pro Gly Gly Ser Asn Gly Asp Trp Gly Ser Ile Tyr Ser Pro Val
165 170 175

Ser Gln Ala Gly Asn Leu Ser Pro Thr Ala Ser Leu Glu Glu Phe Pro
180 185 190

Gly Leu Gln Val Pro Ser Ser Pro Ser Tyr Leu Leu Pro Gly Ala Leu
195 200 205

Val Phe Ser Asp Phe Leu
210

<210> 38
<211> 214
<212> PRT
<213> Rattus norvegicus

<400> 38

Met Ala Pro His Pro Leu Asp Ala Pro Thr Ile Gln Val Ser Gln Glu
1 5 10 15

Thr Gln Gln Pro Phe Pro Gly Ala Ser Asp His Glu Val Leu Ser Ser
20 25 30

Asn Ser Thr Pro Pro Ser Pro Thr Leu Val Pro Arg Asp Cys Ser Glu
35 40 45

Ala Glu Ala Gly Asp Cys Arg Gly Thr Ser Arg Lys Leu Arg Ala Arg
50 55 60

Arg Gly Arg Asn Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65 70 75 80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
85 90 95

His Asn Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
100 105 110

Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
115 120 125

His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
130 135 140

Ser Phe Tyr Gly Pro Glu Pro Pro Val Pro Cys Gly Glu Leu Gly Ser
145 150 155 160

Pro Gly Gly Ser Ser Gly Asp Trp Gly Ser Ile Tyr Ser Pro Val
165 170 175

Ser Gln Ala Gly Ser Leu Ser Pro Thr Ala Ser Leu Glu Glu Phe Pro
180 185 190

Gly Leu Gln Val Pro Ser Ser Pro Ser Cys Leu Leu Pro Gly Thr Leu
195 200 205

Val Phe Ser Asp Phe Leu
210

<210> 39

<211> 214

<212> PRT

<213> Homo sapiens

<400> 39

Met Thr Pro Gln Pro Ser Gly Ala Pro Thr Val Gln Val Thr Arg Glu
1 5 10 15

Thr Glu Arg Ser Phe Pro Arg Ala Ser Glu Asp Glu Val Thr Cys Pro
20 25 30

Thr Ser Ala Pro Pro Ser Pro Thr Arg Thr Pro Gly Asn Cys Ala Glu
35 40 45

Ala Glu Glu Gly Gly Cys Arg Gly Ala Pro Arg Lys Leu Arg Ala Arg
50 55 60

Arg Gly Gly Arg Ser Arg Pro Lys Ser Glu Leu Ala Leu Ser Lys Gln
65 70 75 80

Arg Arg Ser Arg Arg Lys Lys Ala Asn Asp Arg Glu Arg Asn Arg Met
85 90 95

His Asp Leu Asn Ser Ala Leu Asp Ala Leu Arg Gly Val Leu Pro Thr
100 105 110

Phe Pro Asp Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala
115 120 125

His Asn Tyr Ile Trp Ala Leu Thr Gln Thr Leu Arg Ile Ala Asp His
130 135 140

Ser Leu Tyr Ala Leu Glu Pro Pro Ala Pro His Cys Gly Glu Leu Gly
145 150 155 160

Ser Pro Gly Gly Pro Pro Gly Asp Trp Gly Ser Leu Tyr Ser Pro Val
165 170 175

Ser Gln Ala Gly Ser Leu Ser Pro Ala Ala Ser Leu Glu Glu Arg Pro
180 185 190

Gly Leu Leu Gly Ala Thr Ser Ser Ala Cys Leu Ser Pro Gly Ser Leu
195 200 205

Ala Phe Ser Asp Phe Leu
210

<210> 40

<211> 263

<212> PRT

<213> Mus musculus

<400> 40

Met Phe Val Lys Ser Glu Thr Leu Glu Leu Lys Glu Glu Glu Glu Val
1 5 10 15

Leu Met Leu Leu Gly Ser Ala Ser Pro Ala Ser Ala Thr Leu Thr Pro
20 25 30

Met Ser Ser Ser Ala Asp Glu Glu Glu Asp Glu Glu Leu Arg Arg Pro
35 40 45

Gly Ser Ala Arg Gly Gln Arg Gly Ala Glu Ala Glu Gln Gly Val Gln
50 55 60

Gly Ser Pro Ala Ser Gly Ala Gly Gly Cys Arg Pro Gly Arg Leu Leu
65 70 75 80

Gly Leu Met His Glu Cys Lys Arg Arg Pro Ser Arg Ser Arg Ala Val
85 90 95

Ser Arg Gly Ala Lys Thr Ala Glu Thr Val Gln Arg Ile Lys Lys Thr
100 105 110

Arg Arg Leu Lys Ala Asn Asn Arg Glu Arg Asn Arg Met His Asn Leu
115 120 125

Asn Ala Ala Leu Asp Ala Leu Arg Glu Val Leu Pro Thr Phe Pro Glu
130 135 140

Asp Ala Lys Leu Thr Lys Ile Glu Thr Leu Arg Phe Ala His Asn Tyr
145 150 155 160

Ile Trp Ala Leu Thr Glu Thr Leu Arg Leu Ala Asp His Cys Ala Gly
165 170 175

Ala Gly Gly Leu Gln Gly Ala Leu Phe Thr Glu Ala Val Leu Leu Ser
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Pro Gly Ala Ala Leu Gly Ala Ser Gly Asp Ser Pro Ser Pro Pro Ser
195 200 205

Ser Trp Ser Cys Thr Asn Ser Pro Ala Ser Ser Ser Asn Ser Thr Ser
210 215 220

Pro Tyr Ser Cys Thr Leu Ser Pro Ala Ser Pro Gly Ser Asp Val Asp
225 230 235 240

Tyr Trp Gln Pro Pro Pro Glu Lys His Arg Tyr Ala Pro His Leu
245 250 255

Pro Leu Ala Arg Asp Cys Ile
260